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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/412,618	10/06/1999	HANAN GOTHAIT	P-2070-US	9890

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EXAMINER
BAHTA, KIDEST

ART UNIT	PAPER NUMBER
2125	24

DATE MAILED: 02/24/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/412,618	GOTHAIT, HANAN	
	Examiner	Art Unit	
	Kidest Bahta	2125	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 2-5,8-12,14-16,18-22,24 and 27-51 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 2-5,8-12,14-16,18-22,24 and 27-51 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

Response to Amendment

1. Claims 2-5, 8-12, 14-16, 18-22, 24, and 27-51 are presented for examination.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 2-5, 8-12, 14-16, 18-22, 24, and 27-51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Penn et al. (U.S. Patent 5,594,652) in view of Hull (U.S. Patent 5,637,169).

Regarding claims 5, 10, 20, 27, 30, 32, 34, 35 and 36, 46, Penn discloses dispensing (10) a first and second materials (25 and 35) from at least one printing head (20) for dispensing a plurality of materials, each material having a different color (column 9, lines 37-49), the printing head having a plurality of nozzles (Fig. 2a, element 30; column 7, line 35); controller connected to the at least one printing head (column 6, lines 53-60), the first and second materials having a first and second modulus of elasticity (Fig. 12; column 16, lines 17-32), second modulus of elasticity being different from the first modulus of elasticity it is inherent that different material has different elasticity (e.g. a conductive material such as aluminum and a dielectric material such as polycarbonate plastic has different elasticity) (column 16, lines 20-22). The first and second materials having a first and second modulus of elasticity (Fig. 12; column 16, lines 17-32), second modulus of elasticity being different from the first modulus of

elasticity it is inherent that different material has different elasticity (e.g. a conductive material such as aluminum and a dielectric material such as polycarbonate plastic has different elasticity) (column 16, lines 20-22).

Penn specifically does not disclose the first and second materials are different photopolymers. Penn also fails to disclose combining the first and second photopolymer materials in a variably selectable proportion to produce a third material.

However, Hull discloses that the first and second photopolymer materials being different (Fig. 9A), combining the first and second photopolymer materials in a variably selectable proportion to produce a third material (column 19, lines 44-63).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the teachings of Penn with teachings of Hull because a single integrated head is provided by which the prior layer is planarized, and both the part layer and support material is dispensed, in single pass of the head over the target surface. Such construction provides for fast and simpler production of the part or object and a lower cost system for producing such part and objects.

Regarding claims 2, 16 and 24, Penn discloses at least one printing head includes a plurality of printing head and wherein each of the plurality of interface materials are dispensed from a different one of each of the plurality of printing heads, respectively (column 12, lines 17-27).

Regarding claims 3, 4, 14, 15, 31, 37 and 38, Penn discloses an electromagnetic radiation source for curing at least one of the materials (column 19, lines 33-35), curing the first and second material for a first and second period of time and at a first and

second radiation wavelength to obtain the first and second modulus of elasticity (column 10, lines 22-40; Fig. 6a - Fig. 6d).

Regarding claims 8 and 9, Penn discloses the limitations of claim 30, as stated above in paragraph 2. However, Penn fails to specifically disclose wherein approximately 95 to 100% the first material and 0 to 5% of the third material includes the second material wherein approximately 0 to 5% of the release material includes the first material and 95 to 100% of the release material includes the second material required by claims 8 and 9. Absent any evidence of criticality or unexpected results, the criteria set forth in claims 8 and 9 are believed to represent an obvious selection of a different portion of the two materials to one of ordinary skill in the art, since a system reliability stand point, to minimize the time during which the inkjet is in use.

Regarding claims 11, 12, 21, 22 and 28, Penn discloses that first and second material is transparent it is inherent that same materials such as water and wax are transparent (column 18 lines 16-30).

Regarding claims 18, Penn discloses a positioning apparatus coupled to the controller for selectively positioning the first and second printing heads by commands from the controller (column 8, lines 21-34).

Regarding claims 19 and 29, Penn discloses the first and second materials include photo polymer material curable by the application of any one of a group including ultra-violet radiation, infrared radiation and e-beam (column 10, lines 33-39).

Regarding claim 33, Penn discloses the support layer including at least a plurality of release blocks (column 14, lines 24-38).

Regarding claims 39, 40 and 41, Penn discloses repeating the dispensing and combining steps to construct multiple layers of a three-dimensional model (Abstract).

Regarding claims 42-45 and 47-49, Penn discloses the first and second material to produce a support layer (25), a model layer (35) and release layer (50).

Regarding claims 50-51, Penn discloses the controller is operative to cause the at least one printing head to dispense the material so that the materials are combined to form a model layer, support layer and release layer having a lower modulus of elasticity than the model layer (column 13, lines 17-48).

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

5. Any inquiry concerning communication or earlier communication from the examiner should be directed to Kidest Bahta, whose telephone number is (703) 308-6103. The examiner can normally be reached on M-F from 7:30 a.m. to 4:00 p.m.

If attempts to reach the examiner by phone fail, the examiner's supervisor, Leo Picard, can be reached (703) 308-0538. Additionally, the fax phone for Art Unit 2121 is (703) 308-6306 or 308-6296. Any inquiry of a general nature or relating to the status of this application should be directed to the group receptionist at (703) 305-9600.

Kidest Bahta

February 13, 2003

LEO PICARD
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